

CLAIMS

I claim:

1. A recreational vehicle (REV) comprising:
 - a frame having a longitudinal axis and a lateral axis, the lateral axis intersecting the longitudinal axis at a center of gravity of the REV;
 - first and second drive wheels attached to the frame along the lateral axis;
 - a third and fourth wheels attached to the frame along the longitudinal axis, the wheels arranged in a diamond shape; and
2. The REV of claim 1, further comprising:
 - a first motor and a second motor for independently controlling a torque vector applied to the first drive wheel and the second drive wheel, enabling the REV to spin about its axis.
3. The REV of claim 2, further comprising:
 - a battery to provide power to the first motor and the second motor.
4. The REV of claim 3, further comprising:
 - a second battery to provide power to signals, displays, and entertainment electronics within the REV.

5. The REV of claim 1, further comprising:
a joystick to control the REV.
6. The REV of claim 5, wherein the joystick is further for operator selection of vehicle speed, vehicle turn radius and vehicle turn angular velocity, whereby the REV may move in a straight line, in a turn, or spin in place.
7. The REV of claim 6, wherein the joystick is further to control braking.
8. The REV of claim 5, further comprising:
a drive mode selector to select a drive mode, the drive modes including forward and reverse.
9. The REV of claim 8, wherein the drive modes further include Park, the Park mode comprising applying an engine brake to ensure that the REV remains stationary.
10. The REV of claim 5, further comprising:
a moveable mount for the joystick, the moveable mount enabling the joystick to be positioned properly for drivers of various size and at various seating locations.
11. The REV of claim 1, further comprising:
a dashboard including a joystick and a drive mode selector.

12. The REV of claim 1, further comprising:
a smart card reader to receive a smart card, the smart card to act as an activating key to make the REV functional.
13. The REV of claim 12, wherein the smart card stores a user profile, the user profile specifying abilities of the REV.
14. The REV of claim 13, wherein the user profile may comprise one or more of the following: a maximum range, a maximum speed, a maximum acceleration, a maximum weight limit.
15. The REV of claim 1, further comprising:
a vehicle control computer to enable the various functions on the REV.
16. The REV of claim 15, wherein the vehicle control computer comprises:
an equipment profile to limit the REV functionality depending on a current condition of the REV.
17. The REV of claim 15, wherein the vehicle control computer further comprises:
automatic ride procedures to enable the REV to ride in a self-guided mode, without requiring user input through the joystick.

18. A recreational vehicle comprising:
- a drive mode controller to select from among: forward motion and reverse motion; and
 - a joystick to control motion of the recreational vehicle, wherein the joystick provides for operator selection of vehicle speed, vehicle turn radius and vehicle turn angular velocity, whereby the vehicle may move in a straight line, in a turn, or spin in place.
19. The recreational vehicle of claim 18, further comprising:
- a smart card reader to receive a smart card for activating the recreational vehicle.
20. The recreational vehicle of claim 19, wherein the smart card includes a user profile, the user profile defining operational characteristics of the recreational vehicle.
21. A recreational electric vehicle comprising:
- a chassis frame;
 - first and second drive wheels attached to the frame, each of the drive wheels being capable of being powered in a clockwise or anticlockwise direction;
 - first and second stability wheels attached to the frame to provide stability to the frame, the first and second drive wheels and the first and second stability wheels together forming a diamond shape;

a drive motor for independently controlling a torque vector of each of the drive wheels, enabling forward motion, turns, and spins;

a battery to power the drive motor; and

a drive control system capable of taking a set of command signal inputs and applying transfer functions to them to produce the motion and braking function applied to each of the drive wheels.

22. The recreational vehicle of claim 21, wherein the set of command signal inputs are received from a joystick controller.